General Information

The Geospatial Information Data Base™ System (GIDB) offers a fully Object Oriented (OO) database approach to managing the input, storage, retrieval, presentation and mission integration of geospatial data. Since GIDB works in relation to a specific user defined area of interest (AOI), its primary focus is to improve the user's accessibility to spatial data for this region. It utilizes both public domain and commercial OO database technology to establish a portal type connection to various disparate database servers. Likewise it provides users with the capability to store, retrieve and integrate spatial data unique to their own application. GIDB presents this information in both 2D and 3D perspective views, while also offering the flexibility to query this data with reference to time and space.

This document describes the common functionality of the GIDB Graphical User Interface (GUI) mapping application and the steps involved in performing general tasks associated with the input, retrieval and presentation of digital spatial information in the GIDB™ System.

Enhancements

Version 2.2 has a few improvements over versions 2.1 and 2.0. See Appendix A for a detailed list of changes and improvements.

Quick Tutorial

This tutorial is intended to provide a simple summary of steps that users typically take to retrieve, display, and manipulate map data in the GIDB mapping application.

1) Start the GIDB mapping application.

2) Use the *Server Selection* window to connect to all available database servers. (It is important to load all servers available, since some functions in the GIDB require a connection to certain servers.) To connect to a database server, click on its name in the *All database servers found* table in the middle of the window. * Some servers are restricted and require an encryption key file to connect. Once a server is connected, it will appear in the *Connected database servers* table.

3) After you have selected all of the servers, click the *OK* button to close the *Server Selection* window and bring up the *Select AOI* world map window. Select your area of interest by clicking and dragging the mouse, then click the *Close Window* button.

4) Add rasters (images) to the client by clicking on the camera icon  in the toolbar. This will bring up the *Add Raster Layer* window. Click the *AutoSelectRaster* button to access a pop-down menu of rasters. When a raster layer is selected, a preview of the selected layer is shown in the preview pane. * To add the raster layer to your main GIDB map display, click the *Add Layer* button.

5) Once rasters are added to the main GIDB map display, they can be manipulated with tools in the toolbar . The tools are fairly self-explanatory:

Distance Tool	Finds the cumulative distance between waypoints.
Zoom Area	Zooms to fit a box selected by the user.
Center	Centers the map on a selected point.
Pan	Allows the user to "grab" the map and re-center it.
Zoom In	Zooms in on the selected point.
Zoom Out	Zooms out on the selected point.
Pan Up	Pans the map up.
Pan Down	Pans the map down.
Pan Left	Pans the map to the left.
Pan Right	Pans the map to the right.

6) To change each layer's drawing properties, click on the Drawing Options icon  in the toolbar. This brings up the *Layer Drawing Options* window. From here, the user can change draw order, change transparency, or discard layers. In order to change the order in which the layers are drawn on a map, click and drag the handle on the left side of the layer you wish to move. To remove a layer temporarily, click on the checkbox on the right of the layer to select it or deselect it. * To discard a layer completely, click on the "trash can" icon to its right.

7) In order to change the transparency and other properties of a layer, click on the Layer Options icon  to the right of the layer. This will bring up the Layer Options box for that layer. Here you can change the overall transparency of the layer or the transparency of individual colors within the layer. *

8) In the main map view, the user can add a vector layer by clicking on the Vector Layer icon  . This will bring up the *Choose Features to Add* window. Use this window to choose server, database, library, and coverage for vector layers.

9) Any image that is displayed in the GIDB's main map window can be overlaid on elevation data to form a three-dimensional environment to aid in analysis. To display the environment, click on the 3D icon 

in the toolbar. This will bring up a *Compression Level* window. In this window, enter the desired compression of the elevation data. (16 to 1 provides the best 3-D performance while 1 to 1 provides the best quality.) Click the *OK*button to bring up the 3-D viewer. * Within the 3-D viewer, the mouse controls movement. Left-click and gently move the mouse forward. This will cause you to move steadily forward. A motion to the left or right with the left mouse button depressed causes a yaw to the either side. Right-clicking and dragging up or down increases or decreases altitude, respectively. Right-clicking and dragging left or right moves the observer left or right. Navigation speed can be altered in the "Navigation Speed" menu. By default, the terrain is scaled to 4 times its original value. This can be changed with the slider on the bottom of the window.

10) The user can load a Digital Nautical Chart (DNC) from the toolbar on the main GIDB display. Click on the DNC icon 

to use this function. *

11) The user can look up and map an address using the *Address Lookup* option under the *AOI* menu. After selecting the option, the user is presented with the *Address Lookup Tool* window. Type in the address desired. Clicking the *Map It* button will add a flag on the map representing the location of the address and the map is adjusted to center on this location. Clicking on the *Geocode, don't Adjust Map* button only adds the flag, but puts the location's latitude and longitude in the Geocode Result box.

12) The user can connect a Global Positioning System (GPS) and display latest GPS locations on the map using the *GPS* option under the *Query* menu.

Starting the Program

Starting up the GIDB mapping application involves using one of three possible methods:

1) as a Web-based applet by accessing it through a common Web-based browser such as Netscape or Internet Explorer,

2) as a remotely downloaded JAR file application for non-Windows platforms, or

3) as a locally installed application on Windows platforms.

The GIDB mapping application is programmed in Java, and requires the Java™ Runtime Environment (JRE Version 1.4 or greater). It is strongly recommended that the GIDB application is installed on the user's machine as a locally installed application, since this is the most stable of the three choices and installs bundled with everything required to run the application.

Approaches to Running the GIDB Application

These three approaches to running the GIDB application function the same from the user perspective, but offer varying levels of system responsiveness and flexibility. The following sections provide more details on each approach.

Web-Based Applet

Accessing the GIDB directly through a common Java™ enabled Internet browser such as Netscape or Internet Explorer executes the GIDB source code as a downloaded Java Applet. The applet is cached in memory on the client machine and therefore requires no local installation. Selecting the appropriate HTML hyperlink from a GIDB Web Page launches the GIDB Applet. If the Java™ JRE is not already installed on the client machine, the user will be prompted to complete the download of the Java™ plug-in.

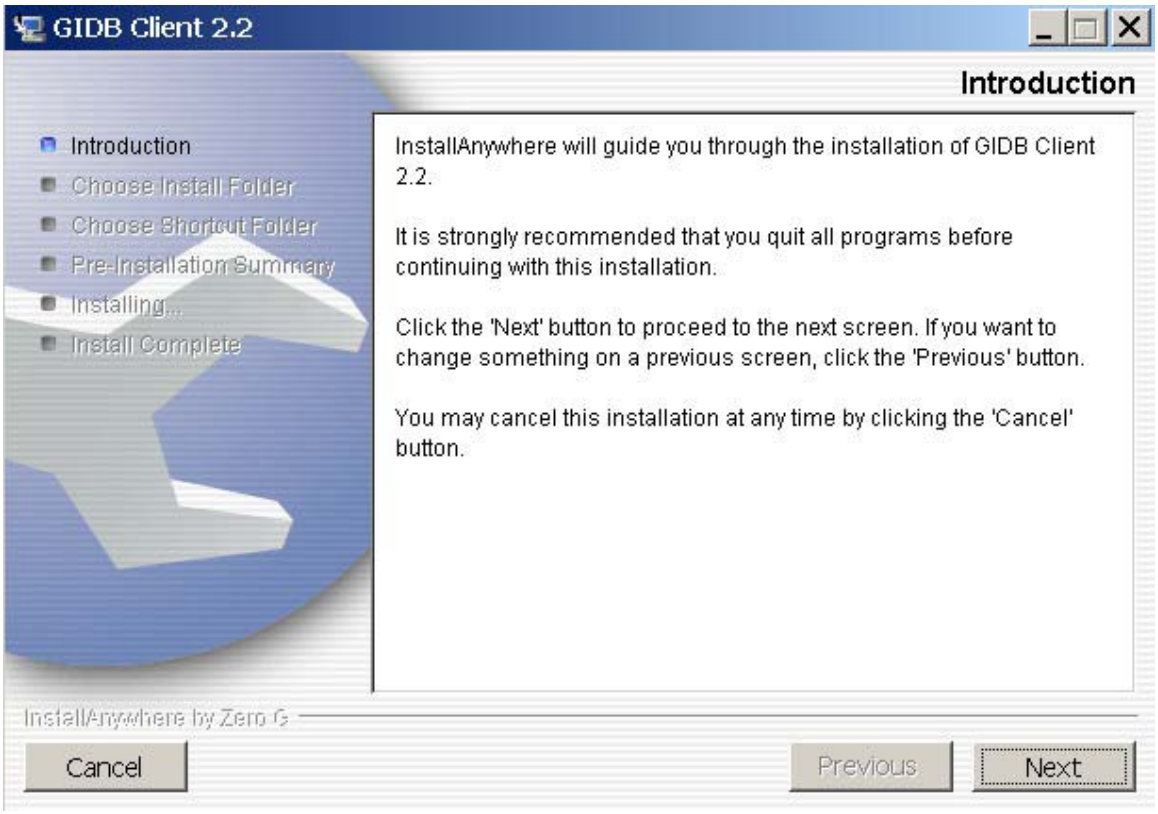
Remotely Downloaded JAR File Application

This approach is intended for use with non-Windows platforms, and requires that the Java™ Runtime Environment (JRE Version 1.4 or greater) be resident on the client machine. The latest JRE can be downloaded from http://java.sun.com. To use the 3D function in the GIDB mapping application, you will need to install Java 3D in your JRE. It is also available at Sun's website.

Download the GIDBClient.jar file to the client machine. Once the .jar file is installed, you can try to launch it by double clicking the jar file. If that fails, use the command "java -jar GIDBClient.jar", assuming java.exe is in your path (java.exe should be located in jreinstallfolder/bin). Also, the parameter "-Xmx" can be used to allow the application to use more memory. For example, if your computer has more than 256Mb memory available, use the command "java -Xmx256M -jar GIDBClient.jar" to launch the application.

Local Machine Application

A full Windows installation utility is provided on the GIDB web site to assist the user through the installation of the GIDB mapping application.



The installer script prompts the user to identify both the location of the install directory and the program group where icons are to be contained. Once the installation is complete, GIDB can then be launched by selecting it from the appropriate program group located under the Windows Start menu.

Operation

Choose one of the methods described in the *Starting the Program* section to access the GIDB mapping application. The GUI for each of these methods will appear the same to the user.

Launch the GIDB Mapping Application

After installation, the GIDB mapping application can be launched as described in the Approaches to Running the GIDB Application section.

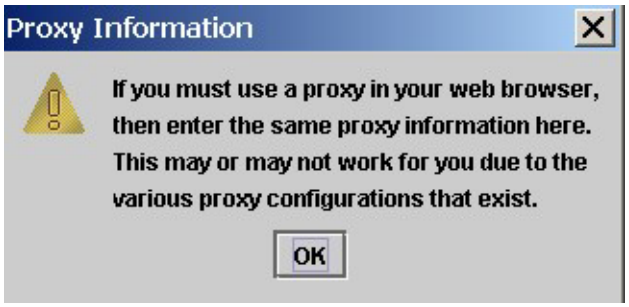
Selecting Database Connections

GIDB acts as a portal to both remote and distributed databases, while also allowing the user to store and retrieve data on the client machine. Database connections are made through the use of Java servlet requests that utilize the connectivity standards of the host database environment.

Using the *Server Selection* window, the user is shown a list of 'Directory Servers' and 'Specific hosts' available to them in the GIDB. These lists can be expanded to include user-defined servers simply by selecting the 'Add' button. Once added, any active databases available on that server should appear in the section of the display that lists 'All database servers found'. Once a database appears in this list, the user can click on it to execute the actual database connection. Once connected, these databases should show up in the section displaying 'Connected database servers'. Typically, the user does not need to adjust 'Directory Servers' and 'Specific hosts' selections.

Proxy Settings

Some networks require a proxy to be set for access to remote sites. Many networks do not, however, so only set proxy settings if needed. If you must use a proxy in your web browser, click the *Set Proxy* button in the *Server Selection* window. A *Proxy Information* window will appear.

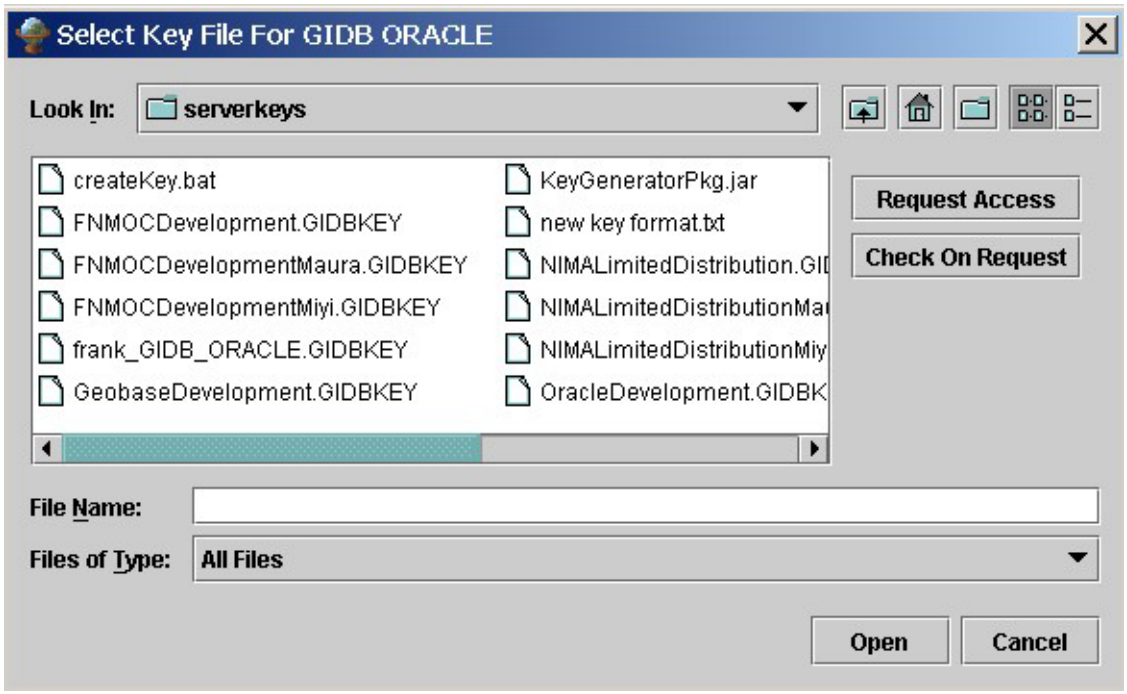


Click the *OK* button, and the *Proxy Settings* window will appear.

If you need to use a proxy, select the *Use proxy server* check box and enter the host url and port number for the proxy server. If you are unsure about the proxy settings, contact your system administrator.

Restricted Data Servers

Some data servers have restricted access, as indicated by a locked symbol in the *Mode* column of the 'All database servers found' list in the *Server Selection* window. An encryption key file is required for access to restricted data. Keep this file in a secure place, and do not transfer it electronically over a network, such as via email. An encryption key file is used to scramble communication between the application and the server so that the data is protected and can only be understood by parties that have the encryption key file (hopefully only the application and the server). If your key file is compromised or lost, contact the server system administrator immediately. When a user attempts to access a restricted data server, a file browse window will appear.

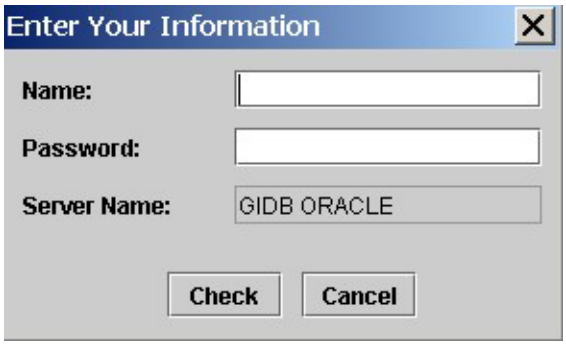


Find the encryption key file for the selected server in your file system, or click the *Request Access* button. When the *Request Access* button is clicked, the *Request Information* window will appear.

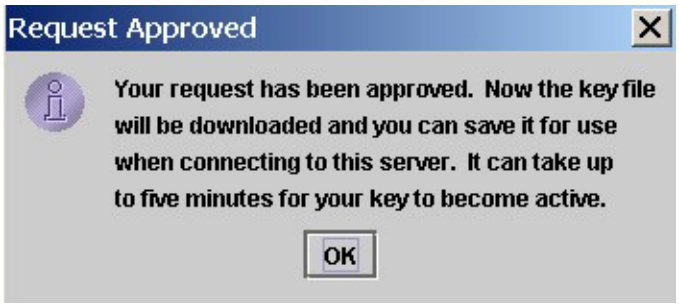
Click the *OK* button, and a new window will appear requesting user information.

All data fields are required to request access to the restricted database. The server administrator will verify the entered data and approve or disapprove access. The user can check on the status of a request for access by clicking the *Check on Request* button in the file browse window (the window that appears when the user tries to access the restricted data server). The *Check On Access Request* window will appear.

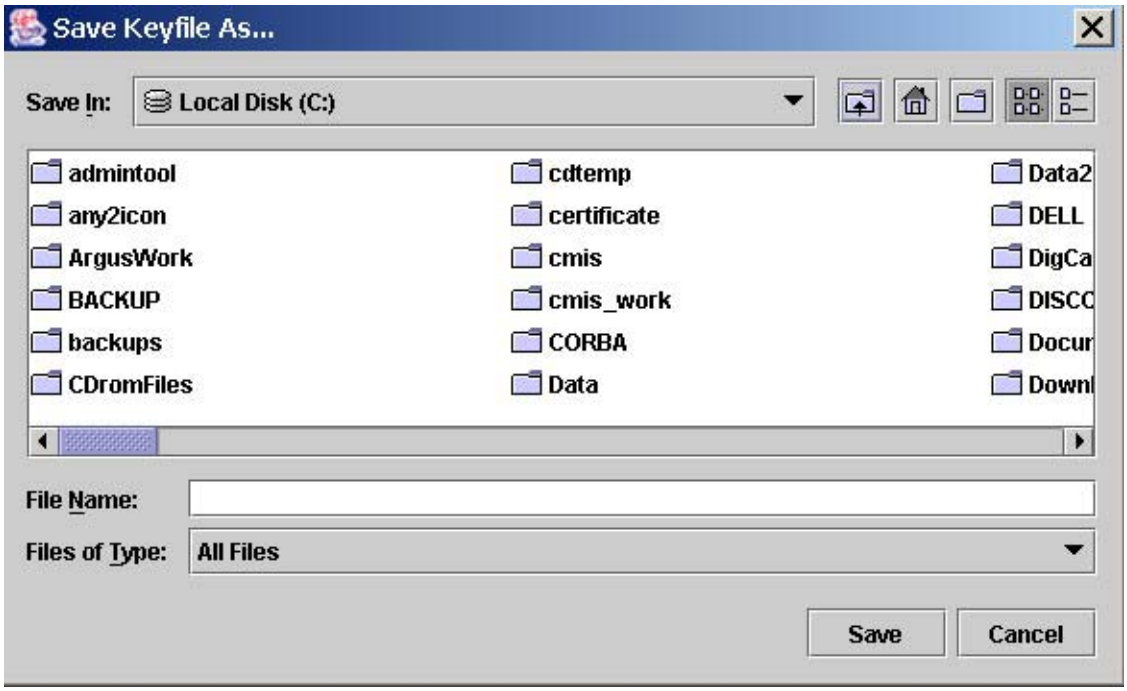
Click the *OK* button, and then enter your username and password in the appropriate fields to check on your access request.



The status of your request will be shown. If the request has been approved, you will see the *Request Approved* window.



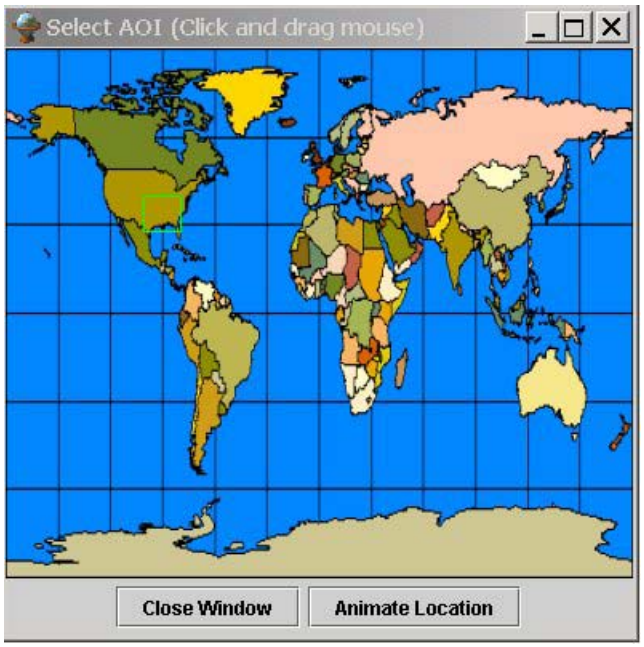
Click the *OK* button, and a file browse window will appear asking you to name the downloaded key file and save it somewhere in your file system.



Remember what you name your key file (ending it with .GIDBKEY is recommended but not required) and where you put it, as you will need to use it each time you connect to the restricted data server.

Selecting Area of Interest

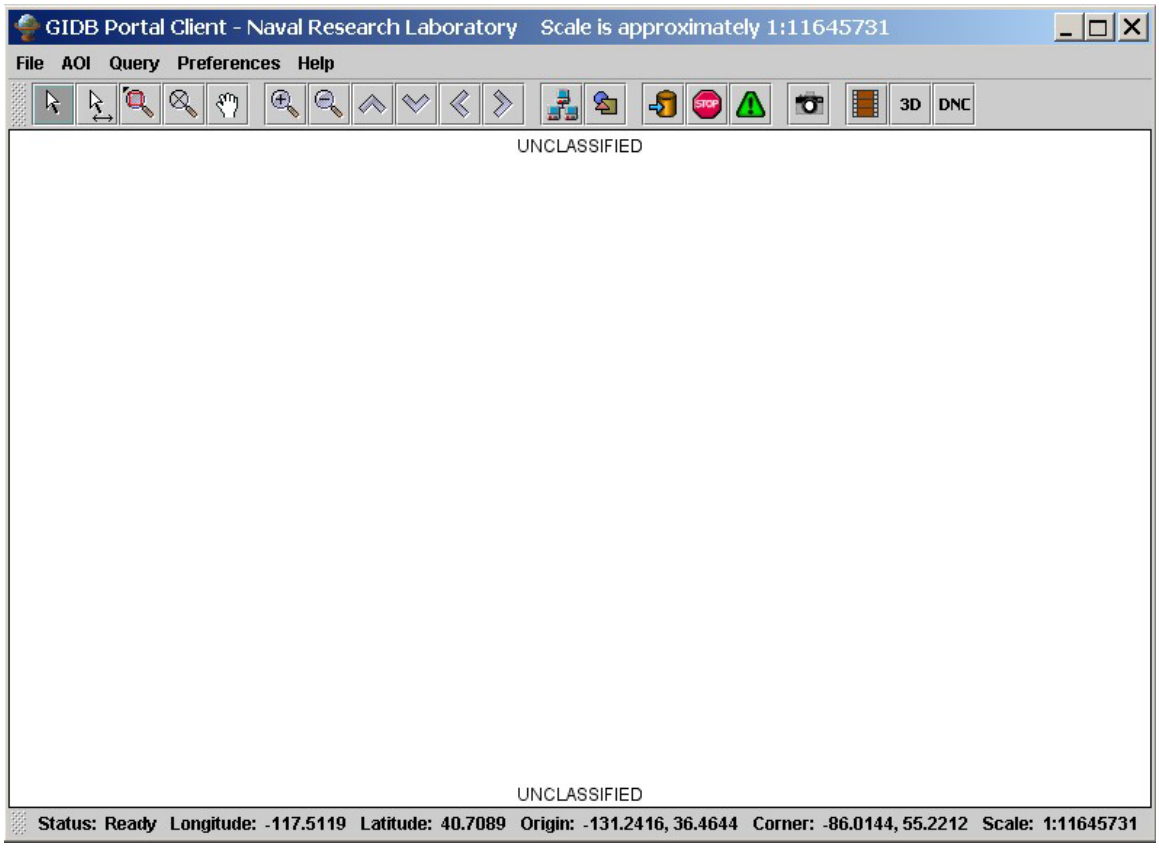
As a Spatial Data Portal, GIDB orients all database operations to an AOI defined by the user. Thus, for any AOI, GIDB manages and presents all data available for only that region, and ignores any other data holdings.



The figure shows the map window provided for the user to graphically define the AOI. The user can re-size the green AOI box by dragging a new box of the area desired. The *Animate Location* button provides a graphic sizing effect of the box to help orient the user to the current AOI selection. When activated, the *Animate Location* option flashes the minimum-bounding rectangle, seen in green above, in a manner that draws the user's attention to its current extents. Once activated, the button label changes to read *Stop Animation.* Once a user has defined the desired AOI, the *Close Window* button can be used to remove the map window. The window can also be minimized or closed using the standard window buttons in the upper right hand corner of the *Select AOI* window.

Main GIDB Map Window

The main GIDB Map window allows the user to select functions from a menu bar and toolbar, and displays map information to the user via a status bar .

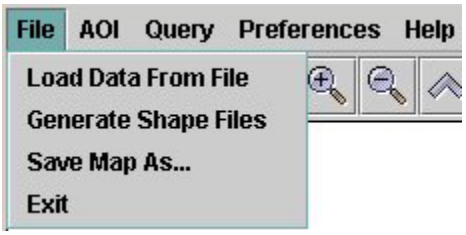


The size of the main GIDB Map window can be adjusted by grabbing a corner and resizing. In addition, both the toolbar and the status bar can be repositioned in the window, or can become separate windows if desired. To move the toolbar or status bar, grab the bar on the far left side (where the rough textured button is) and move it where desired.

Note that the scale of the current map display is visible in the window title bar, as well as in the status bar. Active map layers will be displayed on the map view in the center of the window. The highest classification of all active layers is displayed prominently at the top and bottom of the map view, to let the user know the security classification of the viewable data.

File Menu

The File menu contains options to *Load Data From File* , *Generate Shapefiles* , *Save Map As* ., and *Exit*.

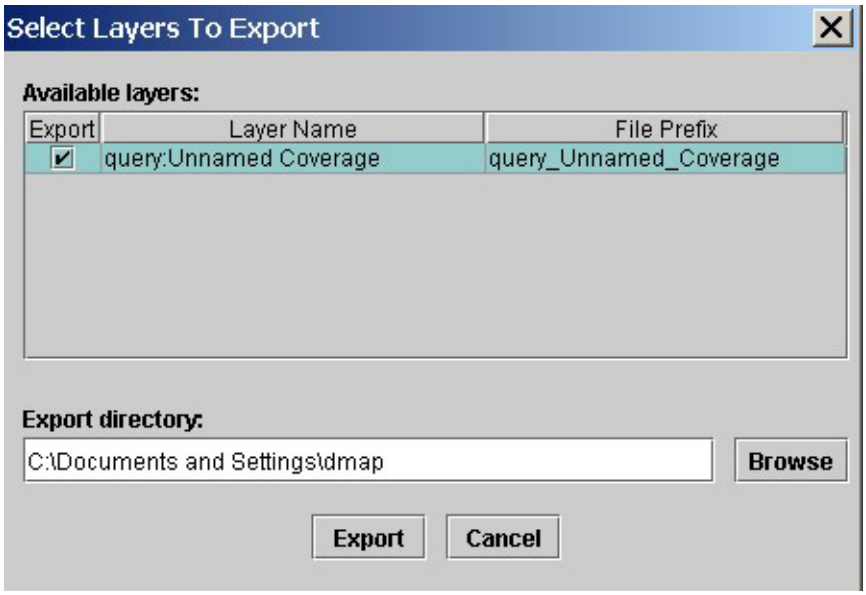


Load Data From File

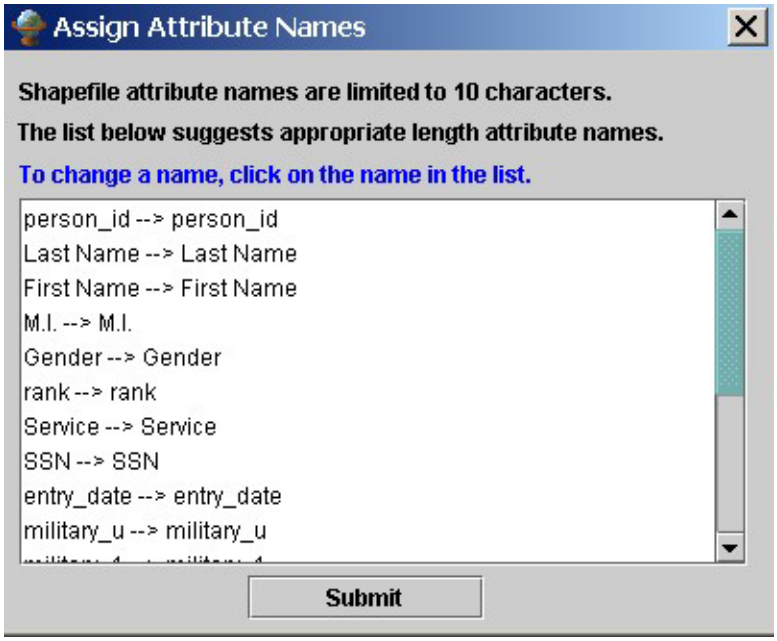
This option will allow the user to load a shapefile (*.shp), dBase file (*.dbf), delimited text file (*.txt), or HPAC overlay file (*.ovl) from the user's local computer system. When selected, a browse window of the user's file system will appear, allowing the user to select the file to load.

Generate Shapefiles

This option will allow the user to save current vector layers in their display as ESRI shapefiles.



Check the layers that are to be exported as shapefiles, and for each layer, the user will be given the opportunity to rename attribute names.



Since shapefile attribute names are limited to 10 characters, the user can assign them meaningful names if desired by clicking on the name and renaming it. For each layer exported, a .security file is associated with it indicating the security classification of the exported data.

Save Map As...

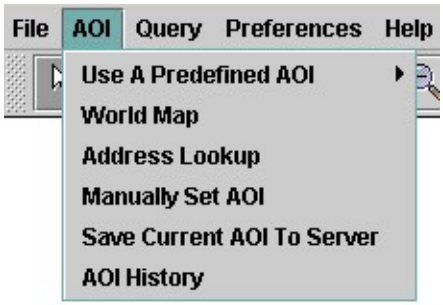
This option will allow the user to save the current AOI on the screen as a .tiff, .png, or .jpg file.

Exit

This option will exit the program.

AOI Menu

The AOI menu provides the user with options that assist in setting the user's specific area of interest. An AOI determines the maximum geographic extents of the viewing window. It is also used to set spatial extents by which the database is queried to determine if features in the database have spatial coordinates that correspond to the AOI. As a result of setting an AOI, all features within the databases of active servers having similar coordinates to the AOI are made available to the user.



Use a Predefined AOI

This option allows the user to select from a list of predefined AOI. These include AOI that the user may have previously saved, and/or AOI that have been saved on specific servers accessible to the GIDB.

World Map

Selecting the *World Map* option from the *AOI* menu allows the use access to the world map image for redefining the AOI. This is the same function as the world map that is displayed upon starting up the GIDB. See Selecting Area of Interest.

Address Lookup

The *Address Lookup* function allows the user the ability to type in an address and add a marker symbol to the map highlighting the location of that address.

The user can retrieve an address from an individual server, or can geocode (find latitude and longitude information) using all available servers. If all available servers are used, there may be several locations found for the same address (although they all should be within meters of each other on the map). Address lookup is worldwide, and can be as detailed as street level, or at a minimum city, state (or country) and/or zipcode.

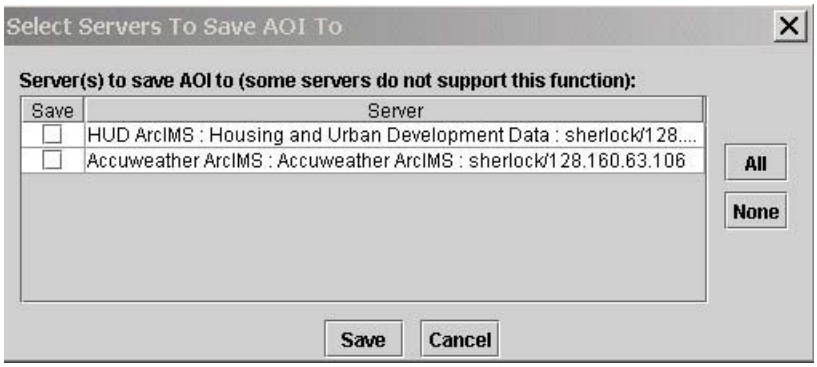
Once an address is typed in, the user can choose to map it, or to geocode but not adjust the map to the AOI of the address. The *Map It* button allows the user to add a marker symbol for the location to the current map display, will center the map at that location, zoom to a scale of approximately 1:60000, and close the *Address Lookup Tool* window. The *Geocode don't Adjust Map* button will display the address location(s) in the current display if within the current AOI, and will leave the *Address Lookup Tool* window open so that additional addresses can be looked up if desired. The current AOI will not be changed with this selection.

Manually Set AOI

The *Manually Set AOI* function allows the AOI to be set by using a set of Latitude and Longitude coordinates input by the user. The user is prompted to enter coordinates in decimal degrees (e.g., 36.1530, -120.3000) using additional options of either *Define Box* or *Define Center And Radius*. By defining the radius of the AOI, the user allows the GIDB to determine the outer corners of the AOI based on a desired distance from the center of the display.

Save Current AOI to Server

This menu option saves the extents of the current AOI to a name on a server that is presently active in the GIDB. A dialogue box labeled *Select Servers To Save AOI To* is displayed for the user. The user can then select one or all of the servers currently available in GIDB to save the current AOI.

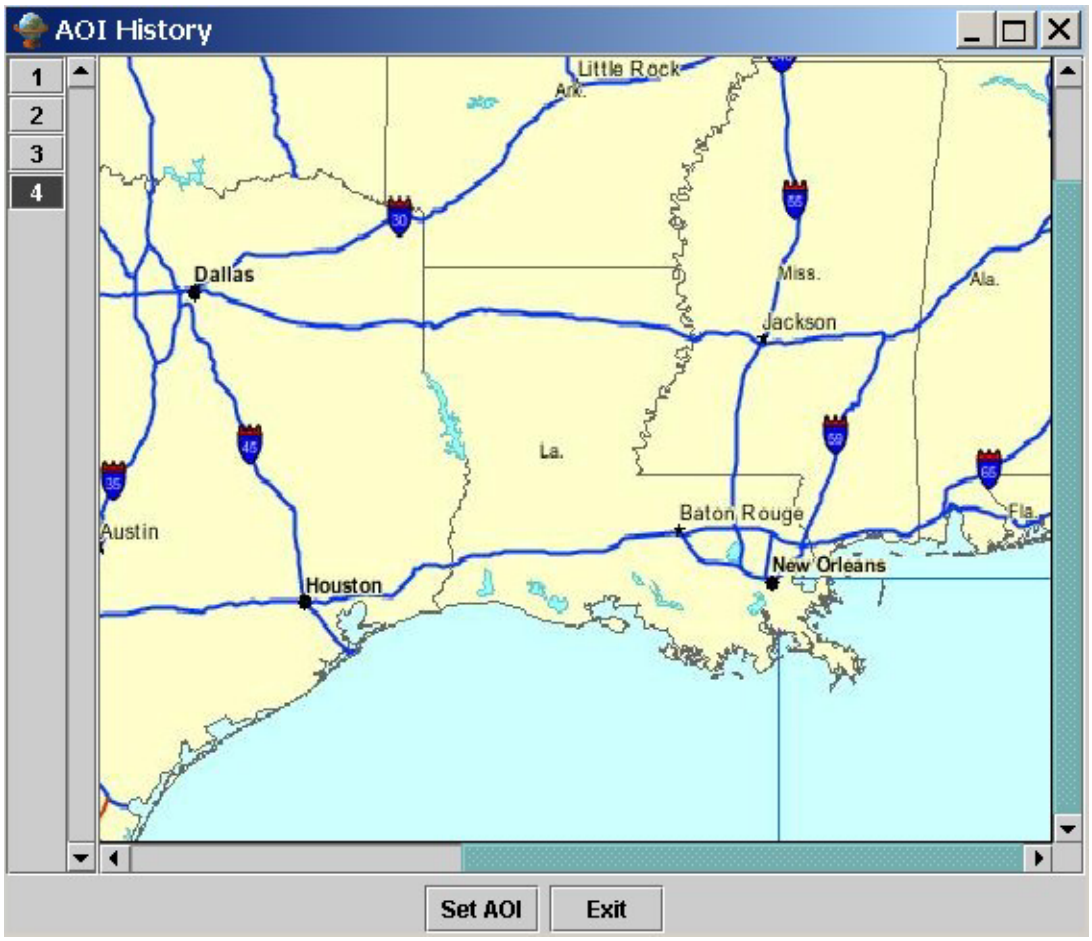


Once saved, these AOI are available to the user through the *Use A Predefined AOI* menu option. Note that some servers do not support the ability to save

AOIs. Also, if an AOI with the same name already exists on a server, it will overwrite the existing AOI.

AOI History

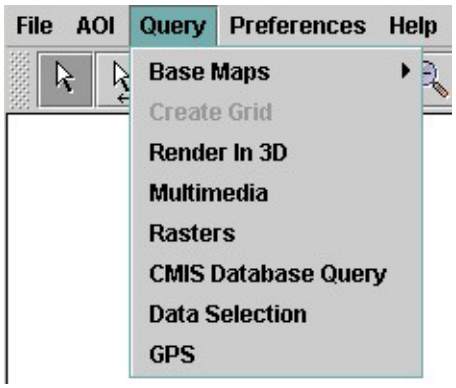
A history of up to 50 previous areas of interest is maintained. Note that only the bounding region itself is kept, not the data layers from that region.



To view previous AOIs, click on the history numbers at the left side of the *AOI History* window. To return to a previous AOI, click the *Set AOI* button. The *Exit* button will close the *AOI History* window.

Query Menu

The *Query* menu contains options to display base maps, create grids, render in 3D, show multimedia, display raster images, query the CMIS database, view the data selection tree, and connect to GPS.



Base Maps

This option can be used to choose from a list of predetermined types of base maps for viewing in the map area. Each base map type will be defined by specifying a list of feature types. One example would be the selection of *Base Map* of type *Navigation*. This option would load all spatial features of type navigation (i.e., buoys, soundings, etc.) for the predefined AOI. The feature sets are predetermined based on criteria define for specialized missions or disciplines. Note that not all servers provide base maps, so sometimes no base maps will be available.

Create Grid

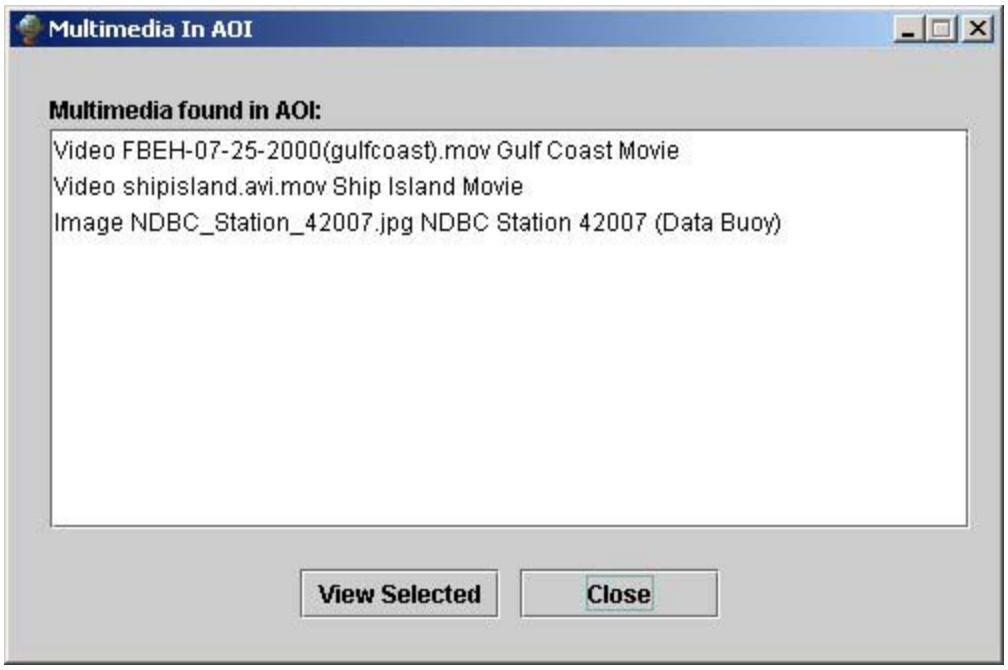
This option is currently disabled. In a future release, this option will be used to generate a file of grid data in Charter file format from area features in the map.

Render in 3D

This option is used to show elevation data in a 3D view. See *GIDB 3D* section.

Multimedia

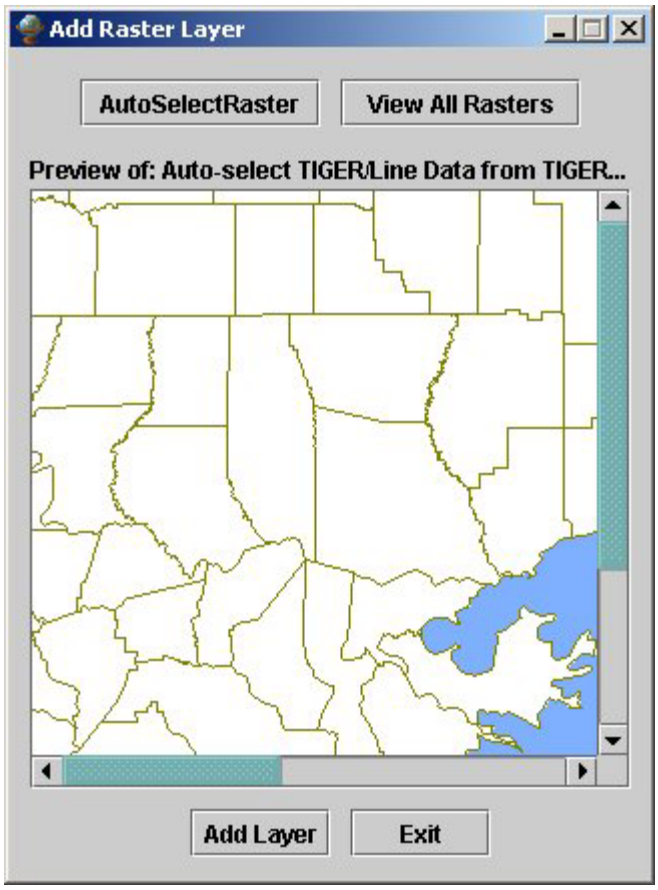
This option is used to select from among the various multimedia found in the current AOI. The list contains all multimedia products found in the current AOI from among the currently connected database servers.



Click *View Selected* to review the selected item.

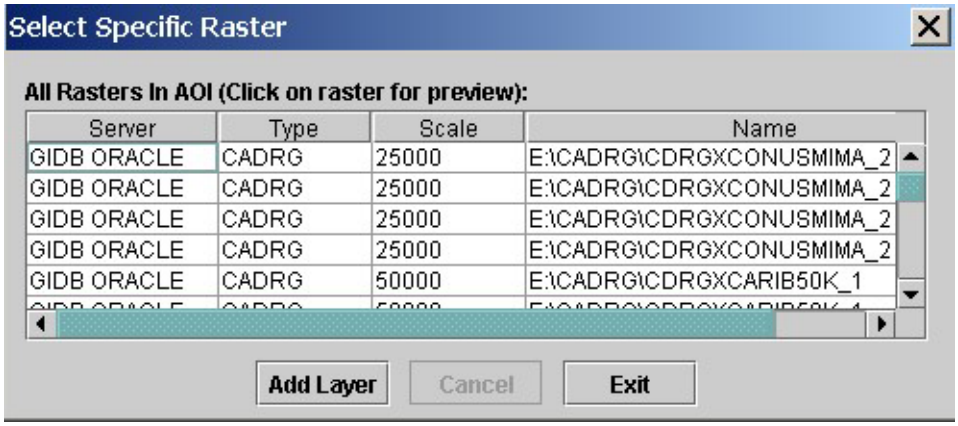
Rasters

This option is used to select one or more raster products from among those found in the current AOI.



The *AutoSelectRaster* button allows the user to automatically select a suitable raster (image) product by displaying a pull down menu of raster types from available servers. First select the desired raster type from the pull down list, for example *CADRG*. The program will automatically choose the raster product of the desired type with the scale most suitable for the current AOI, and will display a preview to the user. If the preview image is acceptable, click the *Add Layer* button to add the image as an active layer in the map display.

The *View All Rasters* button allows the user to manually select a raster product by picking an item from the list in the *Select Specific Raster* window that appears.



The list entitled *All Rasters In AOI* contains all raster products found in the current AOI from among the currently connected database servers. Clicking a layer in the list will retrieve that image from the server and display it in the preview window.

Whether you choose a raster product automatically or manually, that product will be retrieved and displayed in the area entitled *Preview of*. Then you may click *Add Layer* to designate the resulting image to be drawn as an active layer on the map display.

The *Exit* button will close the window.

CMIS Database Query

Note: The CMIS Database Query option may not be available in all versions of the GIDB mapping application. It is a restricted function intended for use by a select audience.

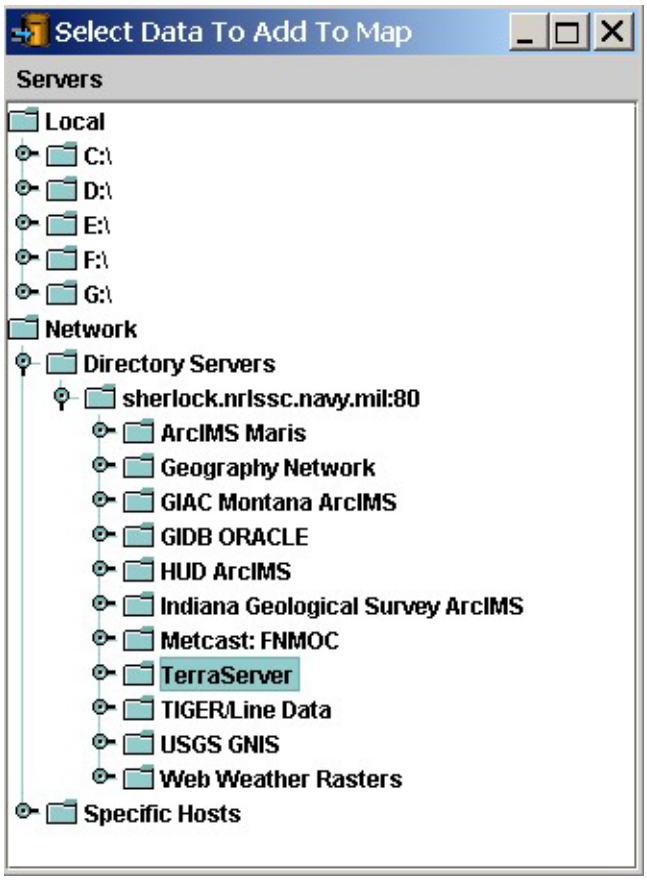
See *CMIS Query Tool User's Guide* in a separate document. Also, help on the CMIS Database Query is available by clicking on the help menu in the window that is launched after connecting to the database.

This option is used to extract relevant data from the CMIS Database via a list of selectable, predefined query questions. In addition, the user can narrow the search by specifying a range of dates and/or a region of interest (e.g., state, congressional district). The query results can be displayed on the map as well as in tabular form.

Note: This same CMIS Query Tool is available in stand alone operation, where output is tabular/text form only without map display.

Data Selection Tree

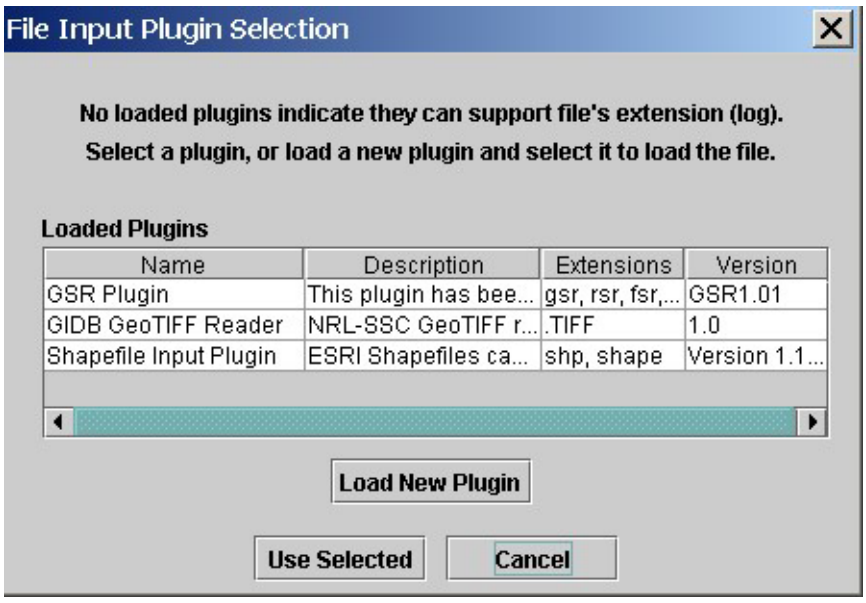
Clicking the *Data Selection* option in the *Query* menu will open the *Select Data to Add to Map* window.



This window provides a file based look and feel to retrieving data from both local and network sources.

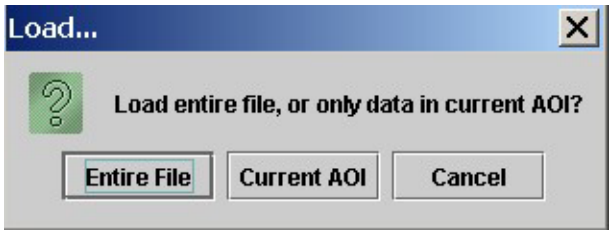
Local Data Access

The *Local* folder in the Data Selection Tree provides access to the user's local computer, so that data on the user's machine can be read and viewed as layers in the map display. When a user double clicks on a file to be read, if a file input plugin does not exist for that file type, the *File Input Plugin Selection* window will appear.



A File Input Plugin is a software component that allows files of certain types to be read and displayed. Select a loaded plugin from the list, or click the *Load New Plugin* button to load a new plugin. Note that a plugin may not exist for the file type that the user would like to have read. If a plugin does not exist that you would like to see created, please contact us .

When a user double clicks on a file to be read, if a file input plugin exists for that file type, the *Load...* window will appear.

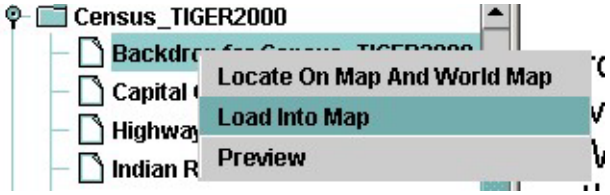


This window allows a user to read in the entire file, or only the data in the file that falls within the current map AOI. After selecting whether to read in all or part of the data, the user may be prompted for more information concerning the data to be read. After entering all requested information, the data from the input file will be displayed as an active layer in the map.

Network Data Access

The *Network* folder provides access to directory servers and specific hosts. A directory server is a GIDB Portal server that provides access to multiple data sources from multiple data servers located on the network (such as the World Wide Web). A specific host is not a GIDB Portal server, but can have data sources available on that specific host machine.

The directory server folder contains folders of all of the GIDB Portal servers that are connected to this client. In this version, only the default GIDB Portal server is available. In the future, multiple GIDB Portal servers can be available for access. Each GIDB Portal server provides folders of all of the data servers that are registered with that Portal. Each data server folder provides access to all data layers (both raster and vector) available in the user's current AOI. To load a data layer in the map display, double click the layer name, or right click the layer name and choose *Load Into Map* from the menu that appears.

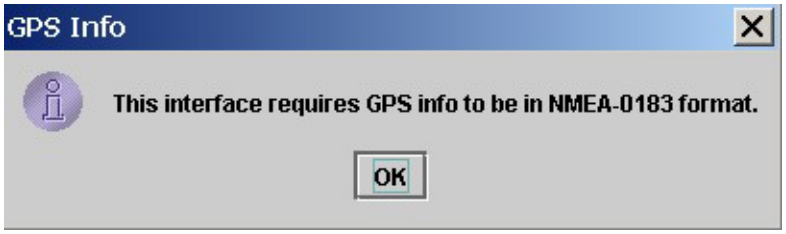


The *Locate On Map and World Map* option will highlight this data layer's AOI on the map display and in the World Map view, so the user can quickly see the data coverage available for this layer. The *Preview* option will provide a preview of the data layer without adding it as an active layer in the map display.

The specific host folder is inactive (not implemented functionally) in this version of the application.

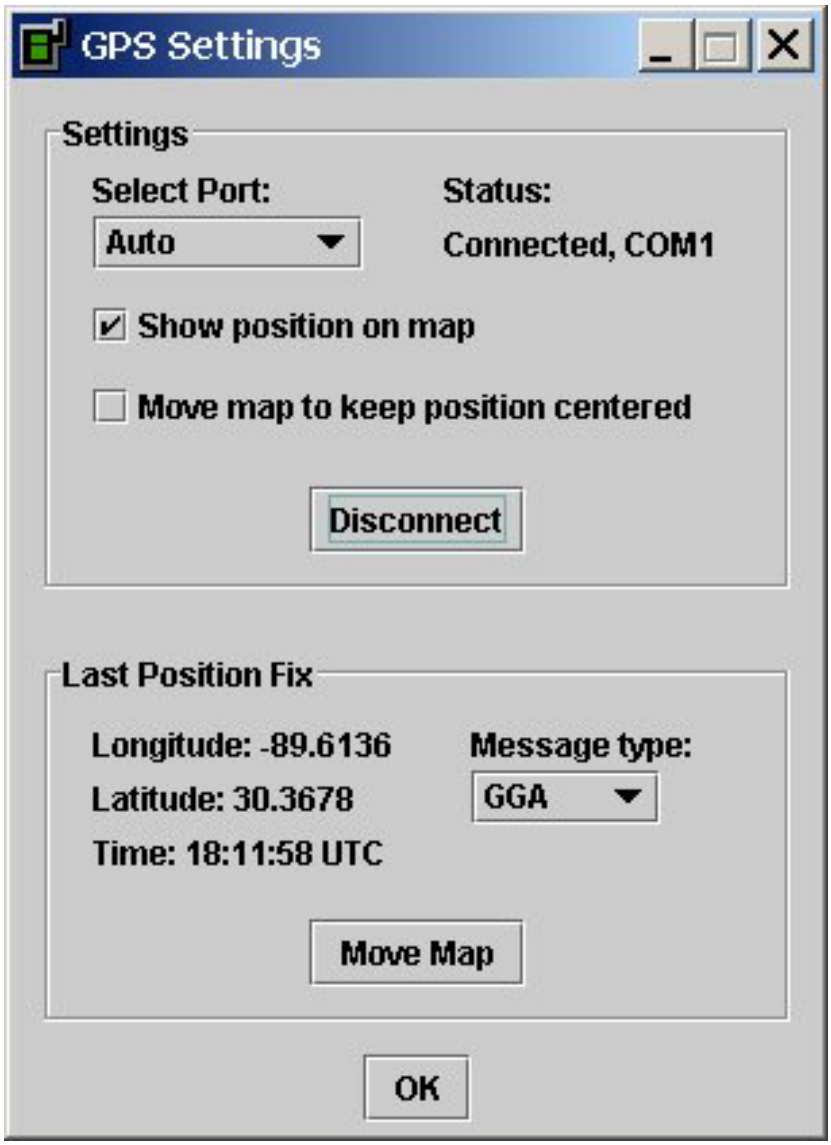
GPS

The *GPS* option allows the user to display position information from a Global Positioning System (GPS) on the map. When selected, a *GPS Info* window will appear alerting the user to format requirements, followed by the main *GPS Settings* window.



The user can select which port on the local computer system from which to read the GPS output, then click the *Connect* button to connect to the selected GPS port. The default port selection is "Auto" which will listen for 5 seconds to each port to smartly select the port that contains GPS messages. The user should also select the GPS message type. The GPS unit must be set to send at least one of the following NMEA-0183 message types: GGA, GLL, or RMC. The GPS unit may need to be manually set to transmit one of these message types. Consult your GPS unit documentation for more information. If connection is

successful, the status will change to "Connected" and the *Connect* button will become the *Disconnect* button. An Error Message window will pop up if connection fails. Once connected, the GPS position will be read and updated every 5 seconds. The last GPS position fix and its time will be displayed in this window.



The *Show position on map* option will display the latest GPS position fix on the map. The icon used is a red flag. Note that each time the position is updated (every 5 seconds), it will update on the map accordingly.

The *Move map to keep position centered* option will cause the GPS position fix to always remain in the center of the map. Note that this simulates a moving map display. Also, note that when the map is recentered all data layers will be updated accordingly, which may require map retrieval from remote servers each time.

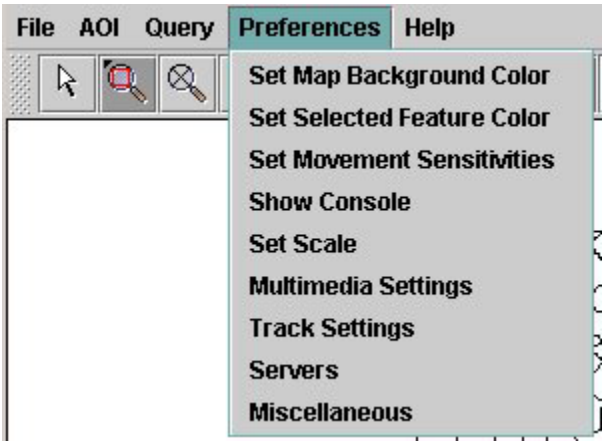
The *Move Map* button will center the map at the lastest GPS position fix. Note that this is a one time re-center at the time of the button click, but if the GPS position changes later it will no longer be at the center of the map. To always keep the map centered at the latest GPS location, use the *Move map to keep position centered* option.

To discontinue reading the GPS output, click the *Disconnect* button.

The *OK* button will close the GPS Settings window. All settings will remain current even though the window closes. In other words, closing the window will not discontinue the GPS readings.

Preferences Menu

The *Preferences* menu provides options the user can select to modify the general display features of the GIDB.



Set Background Map Color

This option, found under the Preferences menu, will set the background to a different color other than the default white color.

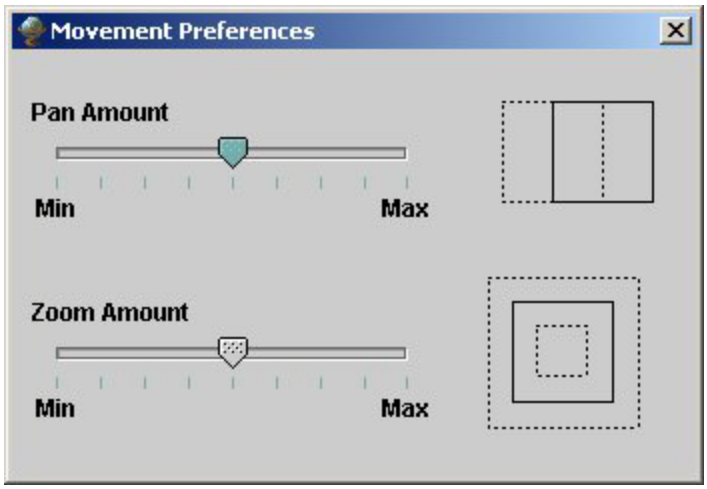
There are three tabs in this window Swatches, HSB, RGB. In the Swatches tab, you click on any of the predefined colors to choose the background. In the HSB tab, you can enter the HSB setting manually or you can click on a color to the left. In the RGB tab, you can enter the RGB settings manually. Once you have chosen a color, click OK. Reset will return the color of the background to the color it was when you opened the window.

Set Selected Feature Color

This option sets the display color of any features that are currently selected. When the user points and clicks on a particular feature, any hyper linked multimedia data or database attributes stored about that feature will be displayed. The feature color symbol is also changed to a preset highlight color. This function allows the user to redefine that highlight color.

Set Movement Sensitivities

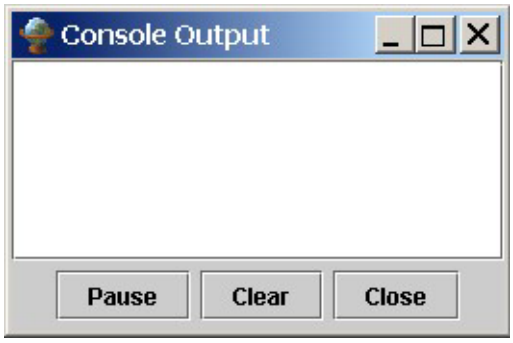
You can reach this window under the *Preferences* menu.



At this window you can set the amount that you will pan or zoom if you click on the one of the predefined pan/zoom buttons on the toolbar. Once you have the settings you want on your pan/zoom options close the window.

Show Console

This option can be accessed under the *Preferences* menu, and there is a button  located on the toolbar to reach this option. If the console button is red, messages have been written to the console.



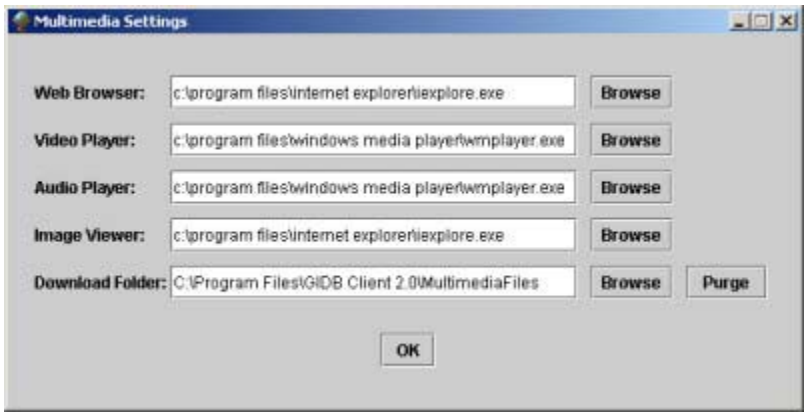
The *Pause* button will pause printing to the console, the *Clear* button will clear the contents of the console, and the *Close* button will exit the window.

Set Scale

The Set Scale option in the *Preferences* menu will open the *Setting View Device Screen* window, which allows the user to set the screen measurements for correct scale display.

Multimedia Settings

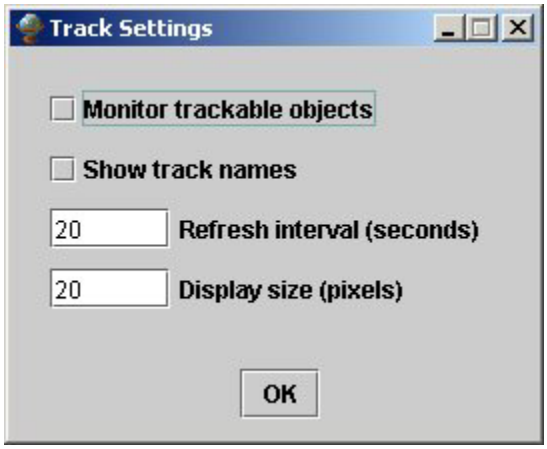
This option is used to change your choice of web browser as well as the various plug-ins to be used with your web browser.



The user may also change the folder to be used to retain downloaded files, and can clean out the download folder by clicking the *Purge* button.

Track Settings

This option is used to change the settings for updating the GPS positions on the map.



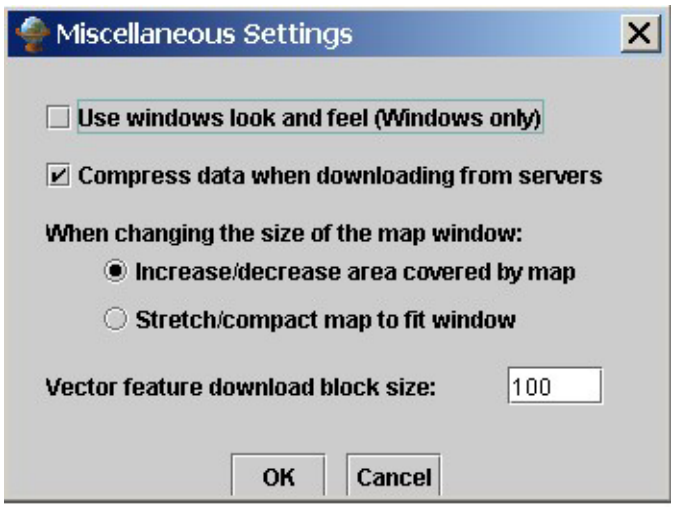
According to these settings, any map objects whose locations are based on continually changing GPS information are continually updated in the map display.

Servers

This option will reopen the *Server Selection* window as discussed in the Data Server Connections section.

Miscellaneous

The *Miscellaneous* settings include general options relevant to the look and feel of the computer operating system and GUI. They include options to make GUI more like traditional Windows appearance, as well as how data is downloaded to the client.



In addition, when changing the size of the map window the user can choose to modify the area covered by the map, or force the current map to fit the new window size.

Help Menu

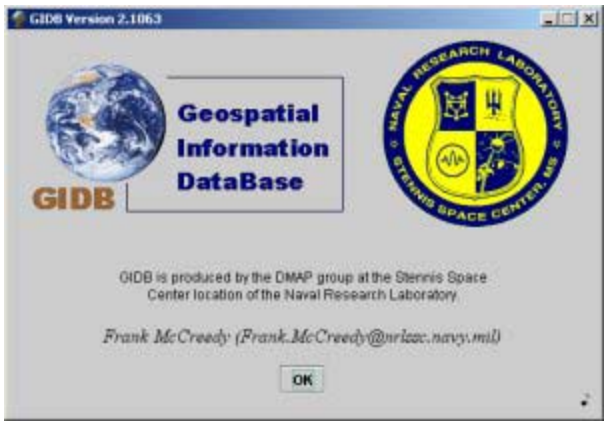
The *Help* menu contains options to see help documentation and to see information about the GIDB mapping application.

Help Documentation

The help documentation for the GIDB mapping application is this document.

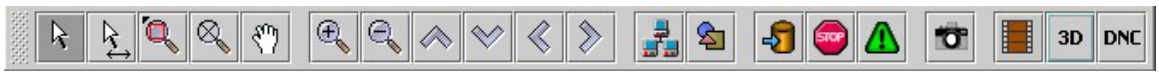
About...

The About option provides version information about the GIDB mapping application, as well as contact information for the development team.



Toolbar

The following sections describe the functionality of toolbar options available in the GIDB.



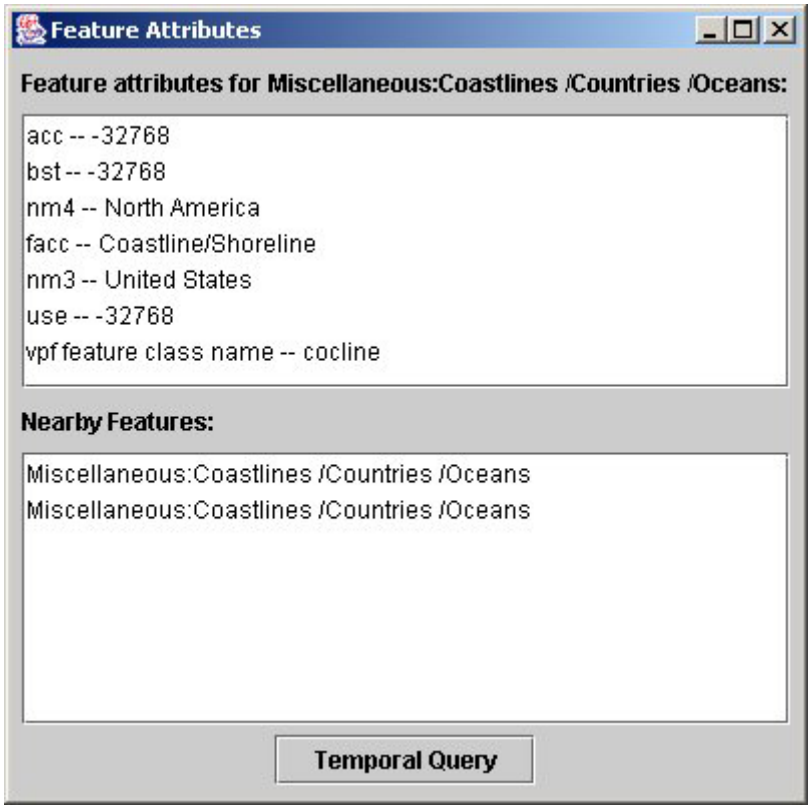
The toolbar can be moved around by clicking on the rough symbol at the far left side of the toolbar and dragging.

Zoom, Distance, and Pan Tools

There are several tools on the toolbar that can be used for zooming and panning functions, as well as selection of features and distance functions. These tools are described below.

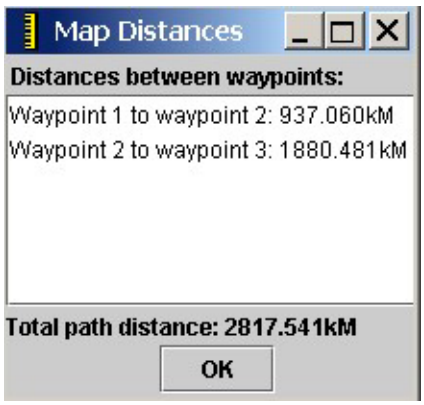
Selector 

This button on the Toolbar allows the cursor to act as a selector. This is used to select features as well as show the attributes for the selected feature. Clicking on any feature with the selector will pop up a window displaying the attributes of that feature.



Distance Tool 

After selecting the Distance Tool button, the Map Distances window will appear. As the user clicks positions on the map display, waypoints are dropped and distances calculated.



Zoom Area 

After selecting the Zoom Area button you select the zoom area by clicking and dragging the mouse on the main map. The map will then automatically zoom into the area you have selected.

Center 

After selecting the Center button you navigate the pointer to where you would like the new center point to be and click. The map will automatically pan to position itself to that center point.

Hand Tool 

Selection of the *Hand Tool* button allows the user to freely pan in any direction to change the AOI. By pointing to a region of the map and holding down the left mouse button, the user can shift the center of the display to a new location. The new center of the display corresponds to the location where the hand icon resides when the mouse button is released. Note that this option makes a request to all active servers to identify and display all features for the new AOI.

Zoom In/Out 

These buttons are clicked when you want to zoom in or out at a predefined amount. To set the amount of zoom, see *Set Movement Sensitivities* option from the *Preferences* menu.

The Pan Buttons 

These buttons will move the map a predefined amount to whichever direction they point. To set the amount of pan, see *Set Movement Sensitivities* option from the *Preferences* menu.

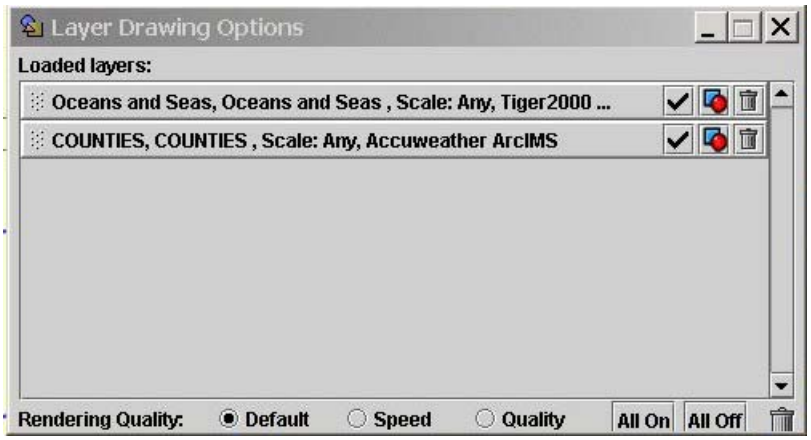
Server Connections

The Server Connections button  will reopen the *Server Selection* window as discussed in the Data Server Connections section.

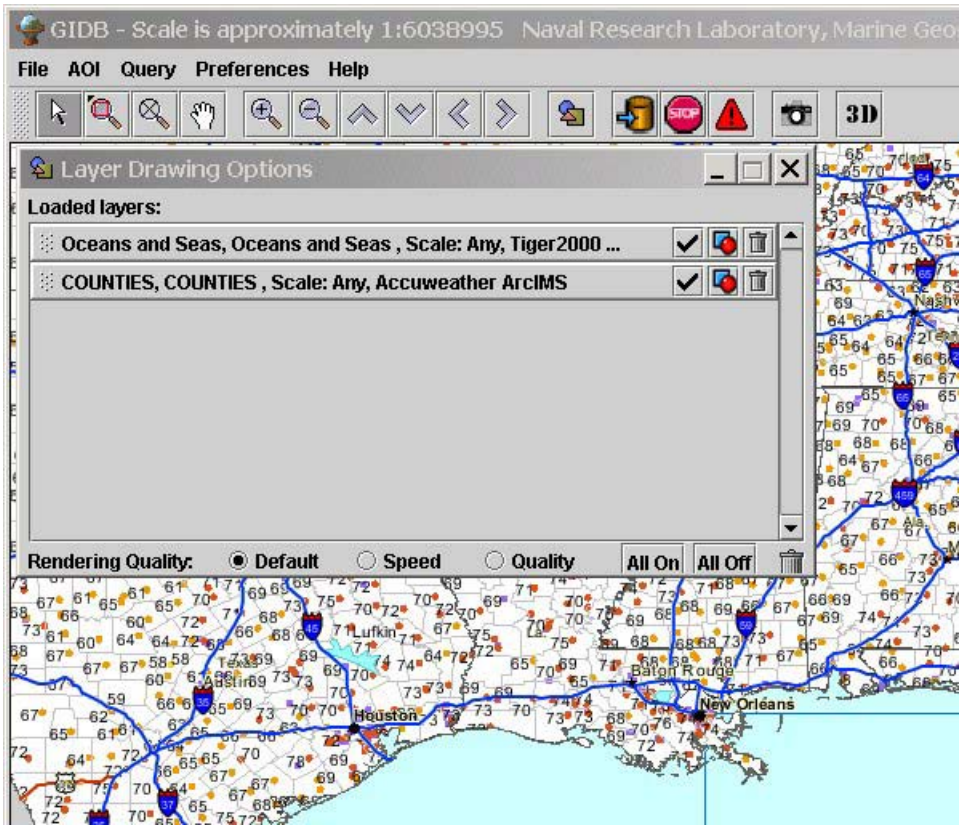
Drawing Options

Drawing Options 

This option allows you to select and adjust options relevant to the symbology and cartographic license of any data being displayed in GIDB. These functions operate differently depending on what type of data is being rendered (i.e., raster vs vector). Note that for raster features, the symbology used by the data server where the raster image resides will take precedent over any GIDB display settings.



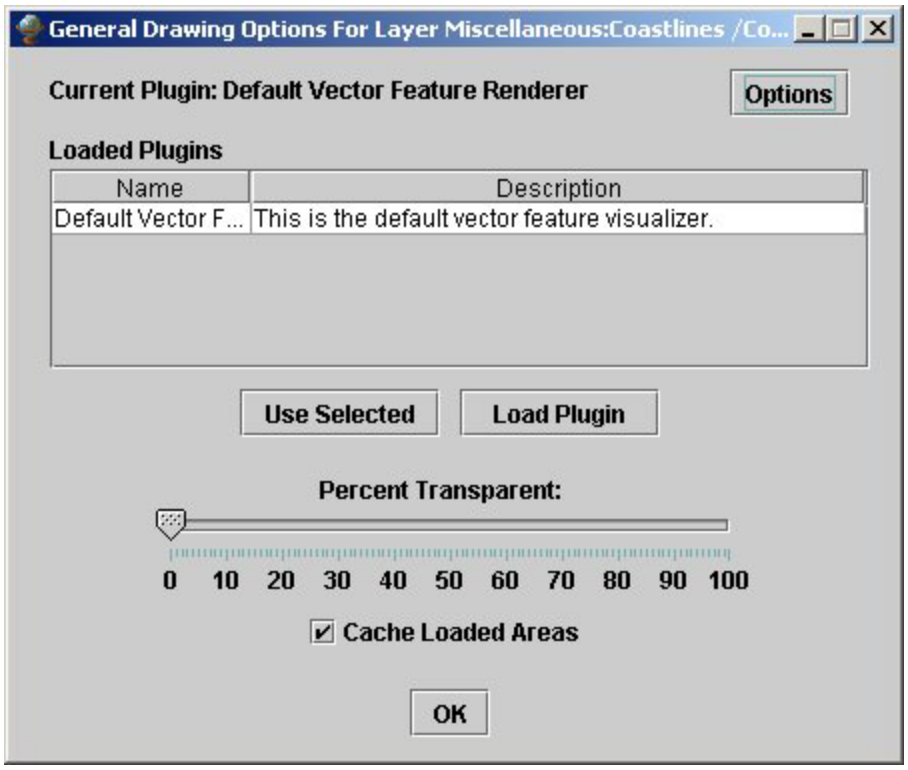
The Drawing Options window is reached by clicking the  button on the Toolbar. On the window that pops up there will be a list of all the feature layers currently displayed on the map. To the right of each vector feature title is a Color Box. If you click on the box you can change the color of the vector feature on the map. For raster data, this option allows you to set the opacity of the entire raster layer, or to identify certain feature colors that you want to be transparent. In the image below this option has been used to turn make the yellow color of Tiger Land/Oceans layer transparent to allow other point features to show through this layer.



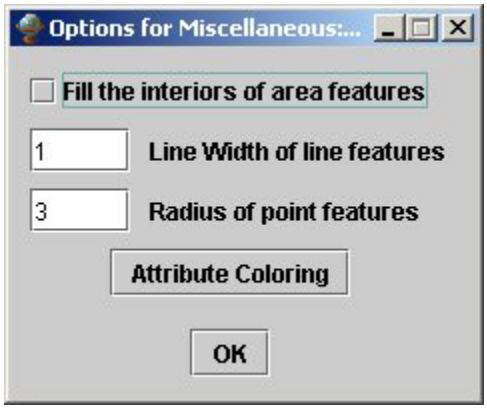
The user may also drag and drop the list items by clicking on the button to the far left of the layer name. The items in the list are sorted according to the order in which the corresponding features are drawn on the map. Thus dragging one item below another on the list will allow the features for the higher item to be drawn on top of features for the lower item.

Options for Vector Features

Vector features are point, line, or area features that have attribute information associated with them. Vector features are active in the GIDB map display, meaning that they may be selected and queried for information about their attributes and associations with other features. To modify the drawing options for vector features, click on the  button in the *Layer Drawing Options* window for the vector feature layer of interest. The *General Drawing Options for Layer* window will appear.



This window allows the user to select a drawing plugin for this vector layer. Drawing plugins are used to draw vector features in different ways, such as using symbology. The default is to draw features as regular points, lines, and polygons. This window also allows the user to set the transparency of this layer, and to decide whether to cache loaded areas. Caching loaded areas is recommended, since it will prevent reloading of the same features from the server if the area of interest is changed. However, note that more system resources are used when areas are cached. Additional drawing options are available by clicking the *Options* button. This will open the *Options* window.



The user can turn fill for area features on and off, change the width of line features, change the radius of point features, and change attribute based coloring with this tool.

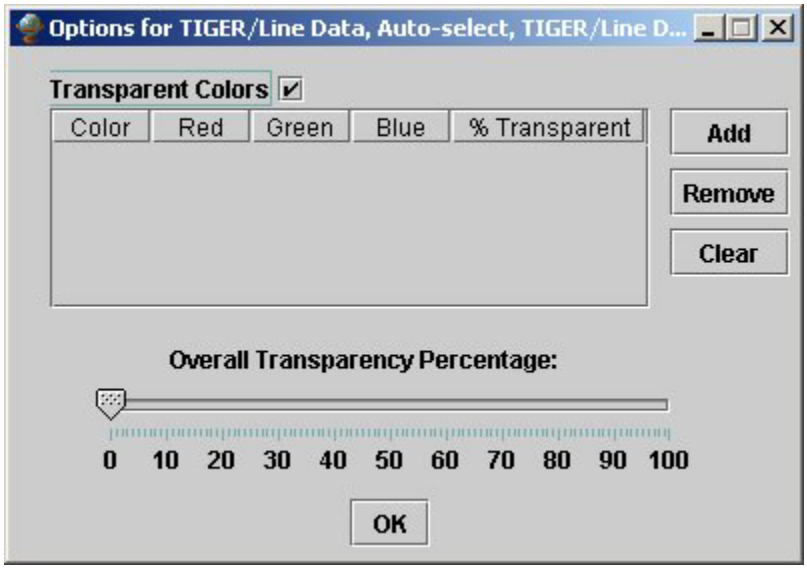
Fill the interiors of area features - clicking on the button will determine whether or not the polygons of a feature are shaded in.

Line width of these features - Changing the number in the text field to the left of this option will change the width of the lines that draw the features (useful for hard to see highways and such).

Radius of point features - Changing the number in the text field to the left of this option will change the size of point features such as buildings.

Options for Raster Layers

Raster layers are inactive map layers such as geo-rectified jpeg, tiff, and gif images. The features in raster layers cannot be selected or queried upon, so raster layers are just pictures. To modify the drawing options for raster layers, click on the  button in the *Layer Drawing Options* window for the raster layer of interest. The *Options for Layer* window will appear.



Click on the *Transparent Colors* check box or its label to determine whether or not the colors in the list are all at once made transparent on the map.

Click on the *Add* button to add colors to be made transparent on the map. This will pop a window entitled *Select New Transparent Color* (see below).

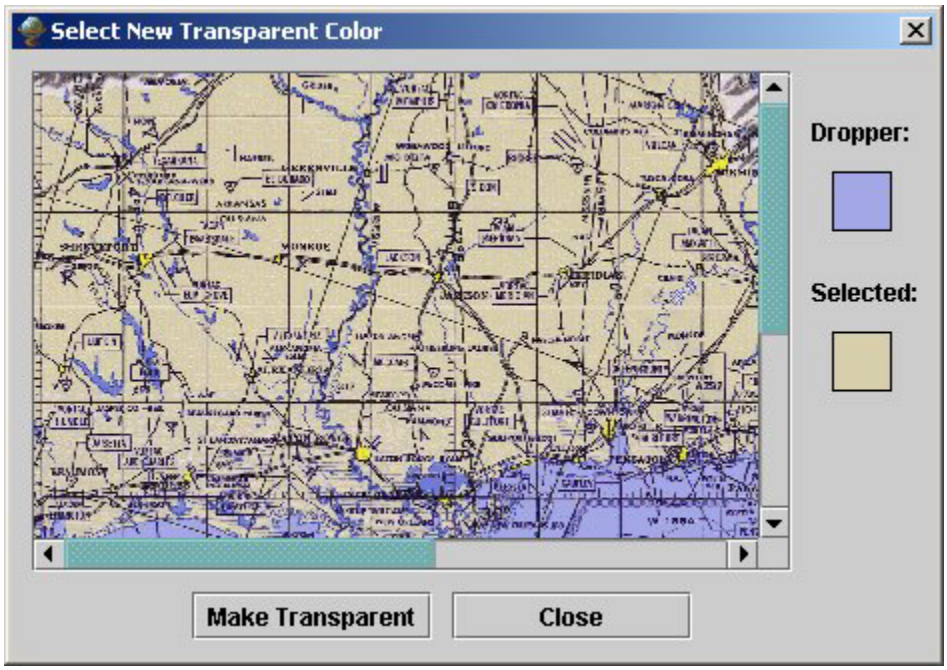
Click on the *Remove* button to remove the selected color from the list. Hence that color will reappear in the image on the map.

Click on the *Clear* button to remove all colors from the list. Hence all colors will reappear in the image on the map.

Click and drag on the transparency slider to change the percentage of transparency of the image on the map. Only those colors previously opaque are affected.

Select New Transparent Color

Move the mouse over the map in this window, and the *Dropper* box reflects the map's color at the current position of the mouse.



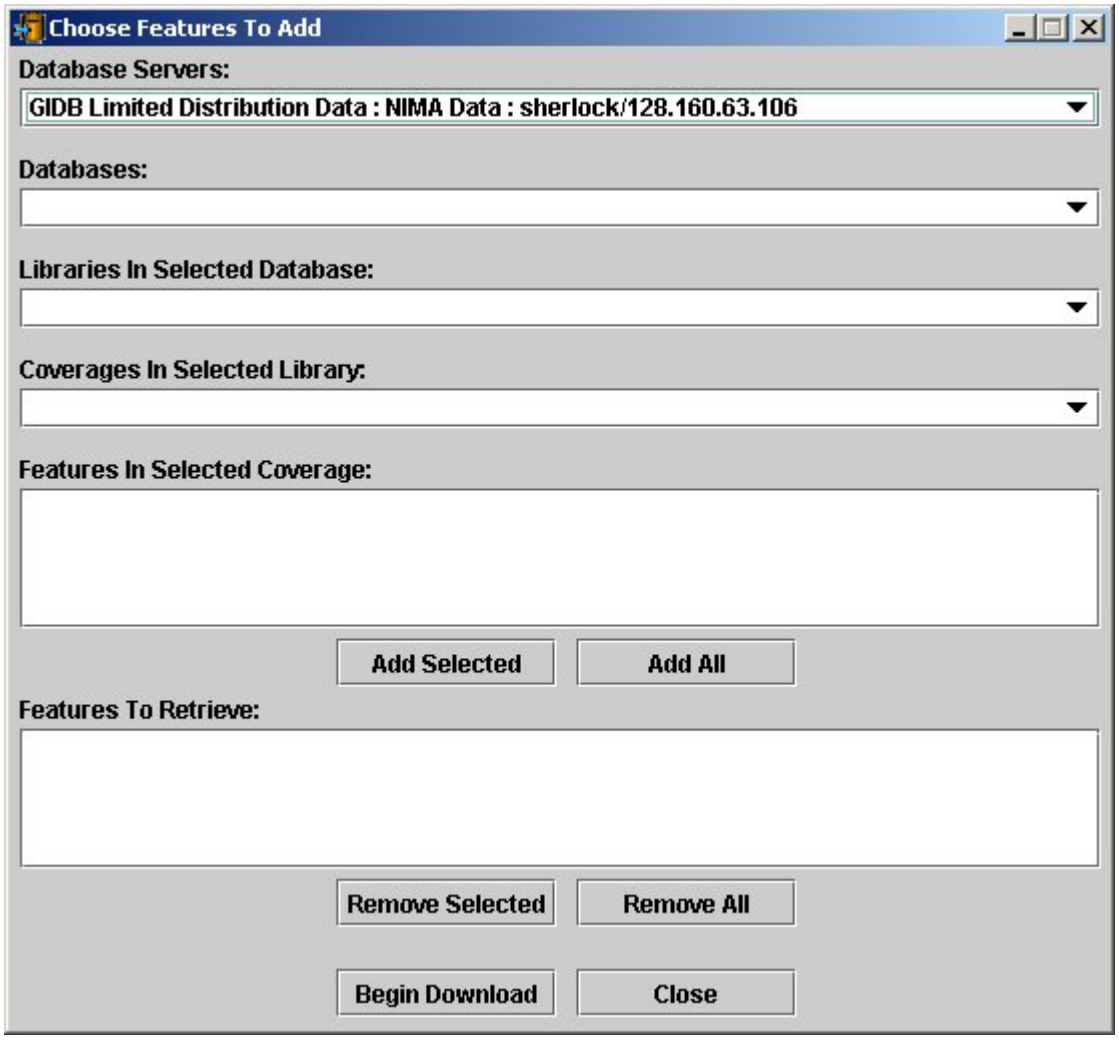
Move the mouse outside of the map, and this box reflects the color at the point of the mouse's exiting the map.

Click the mouse at any point on the map in this window, and the *Selected* box reflects the map's color at that point.

Click the *Make Transparent* button to make the selected color transparent. Also, the selected color will be added to the list in the parent window *Options for Raster*.

Adding Vector Features

Clicking the  button on the toolbar opens the *Choose Features to Add* window.



This window contains a series of lists allowing you to drill down into the various levels of feature containment. If you select an item from the Database Servers list, then those databases currently available from the selected database server will appear in the Databases list. Similarly, your choice from the Databases list will result in certain libraries appearing in the Libraries in Selected Database list - and so on downward for coverages in the Coverages in Selected Library list and features in the Features in Selected Coverage list. In order to designate a feature for inclusion on the map, click on the feature and click on the *Add Selected* button. You can add all the features in the list by clicking the *Add All* button. Features may also be removed from the list by clicking on the *Remove Selected* button or the *Remove All* button. Once you have selected every feature you want, click *Begin Download*. The features you have chosen will then begin to be downloaded and drawn onto the main map screen. Closing this window will not stop the retrieval of features that have been selected. To stop feature retrieval, click the *Stop Feature Retrieval*  button. This button is useful when the download is taking too long, or when the user decides to choose different features during the middle of a large download.

Show Console Tool

The *Show Console*  button will open the Console window. See *Show Console* section.

Adding Raster Layers

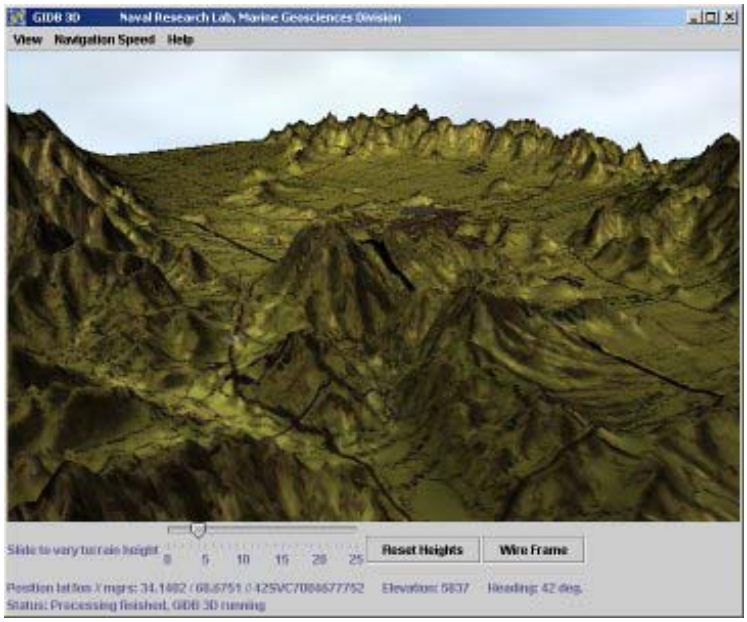
The *Add Raster Layers*  button will open the *Add Raster Layer* window. See the *Rasters* section for more details.

Multimedia Button

Clicking the *Multimedia* button  will open the *Multimedia In AOI* window.

GIDB 3D

The *GIDB 3D*  button will invoke the *GIDB 3D* viewer for viewing the 2D map draped over elevation data.

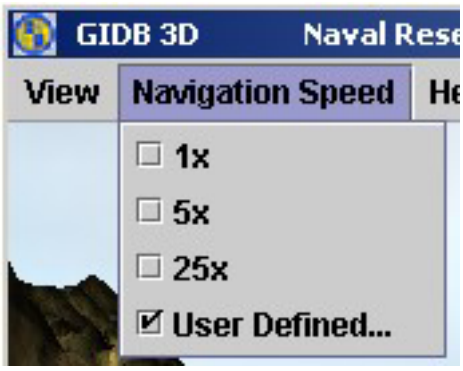


Note: Use of *GIDB 3D* requires installation on your computer of the Java 3D plug-in for your web browser. See your system administrator for details.

GIDB 3D - Help Menu

Select from this menu to view the *Help* window or the *About* window

GIDB 3D - Navigation Speed Menu



Select from this menu to determine the speed at which the viewing point moves through the view in response to the mouse movement.

GIDB 3D - View Menu

Select from this menu to determine the extreme point of the AOI at which to place the viewing point looking inward at the AOI.

GIDB 3D - Mouse Buttons

Left Mouse Button – Drag this button to move the viewing point in the viewing direction.

Middle Mouse Button – Drag this button to rotate the viewing direction about the viewing point.

Right Mouse Button – Drag this button to move the viewing point while preserving the viewing direction.

DNC Button

Clicking the *DNC* button 

will load a minimal navigational base map of NIMA Digital Nautical Chart (DNC) vector features, if available. The features will be displayed using GeoSym 4 Symbology, if available, so that the layer has the appearance of a navigational paper chart.

Status Bar

The status bar is located at the bottom of the *Main GIDB Map Window*.

Status indicates the current status of the program, such as whether it is downloading any features. Latitude and longitude indicate the current latitude and longitude position of the cursor. Origin and corner indicate the bounds of the user's current area of interest, and scale of the current map is displayed. Note that scale information is also located at the top of the *Main GIDB Map Window*. The status bar can be moved around by clicking on the rough symbol at the far left side of the status bar and dragging.

Conclusions

The GIDB Help documentation is available in both printed and online versions. With each major version release of GIDB, the help documentation is updated and made available within the latest installation script. Any new attempts to start GIDB on a local machine after a new version release will generate a request to download the new version. Therefore, users version of the help documentation should remain up to date with their current version of the GIDB.

Hard copy of the help documentation for GIDB is available through the NRL GIDB point of contact, Kevin Shaw, NRL Code 7440.2, Stennis Space Center, MS 39529-5004, (228) 688-4197 or email: shaw@nrlssc.navy.mil.

Questions/Comments/Suggestions

Please email any questions, comments, or suggestions for improvement to Kevin Shaw, shaw@nrlssc.navy.mil or Frank McCreedy, fmccreedy@nrlssc.navy.mil.

Appendix A

The following table contains changes and enhancements since version 2.1.

Description	Purpose
DNC button added to toolbar for display of navigational charts.	New capability
Multimedia button added to toolbar.	Upgrade
Distance tool added so users can find distances between points on the map.	New capability
Data selection tree implemented for easier access to data layers.	Upgrade
Address lookup improved for worldwide lookup and selection of geocode servers.	Upgrade
When changing the size of the map window the user can choose to modify the area covered by the map, or force the current map to fit the new window size.	New capability
Faster sorting/display of available rasters list.	Upgrade
Better handling of server generated errors.	Upgrade
Security classification level of layers is now shown.	New capability
Improved proxy support.	Upgrade
Better support for text vector features (displays as text using given anchor points).	Upgrade
File input plugin architecture developed. This will make the task of integrating readers for various file types easier.	New capability
Fixed directdraw problems on windows (dll loading problems, various drawing problems).	Bug fix
Server now has ability to autostart servers listed in a file (autoservers.txt).	New capability
AOI histories are now kept, allowing user to view map of	New capability

previous AOI and they can go back.	
Greatly improved geotiff input/output memory usage (can load/save much larger images now).	Upgrade
Raster previews now cancelable if user decides it is taking to long to generate.	New capability
GPS interface (standard NMEA 183) added. Shows position on map from gps, can also move map to "follow" gps position.	New capability

The following table contains changes and enhancements since version 2.0.

Description	Purpose
Visualization Plugin Architecture - allows java code to be dynamically brought into running application and render vector data in any way desired.	New capability
Preferences are now saved (screen sizes, directories, etc).	New capability
Triple DES encryption is now available.	New capability
Server code has been streamlined (invoked methods).	Upgrade
Console window activated.	New capability
Layer options have been redone (trash can, options changed, all on/off, etc).	New capability
Feature class bounds detection was added. In example, this was done so attempts to bring in Camp Shelby features isn't made when you move over to Kabul.	Bug fix
The 3d viewer compression options have been upgraded.	Upgrade
The ability to import new file types (.txt dbf,etc) has been added.	New capability
The Installer VM was switched to java 1.4.0, Version 1.4.0 is now required.	Upgrade
Auto-updater improved (not forced, bugs fixed).	Bug fix
Proxy support has been added.	New capability
Rendering quality is now layer level instead of feature level – this should improve the drawing speed.	New capability

* Please allow some time for actions to register as server response time may vary.